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Shawn Hunter

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Richard D. Haun

Serial No.: **10/814,464**

Filed: **03/31/2004**

For: **Floating Platform with Storage
Tanks for Compressed Gas
and/or Hydrate Forms of
Hydrocarbons**

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Examiner: **Tara L. Mayo**

Art Unit: **3671**

Attorney Docket No.: **OPE-1001-CP2**

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

CORRECTED APPEAL BRIEF

I. Real party in Interest

The real party in interest is:

OPE International L.P.
10370 Richmond Ave., Suite 1000
Houston, Texas 77042

II. Related Appeals and Interferences

There are no other appeals, interferences, or judicial proceedings that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. Status of claims

The application as filed included claims 1-17. Claims 4-5, 7-8 and 17 have been cancelled. Claims 1-3, 6 and 9-16 are currently pending in the application and were finally rejected on May 31, 2006.

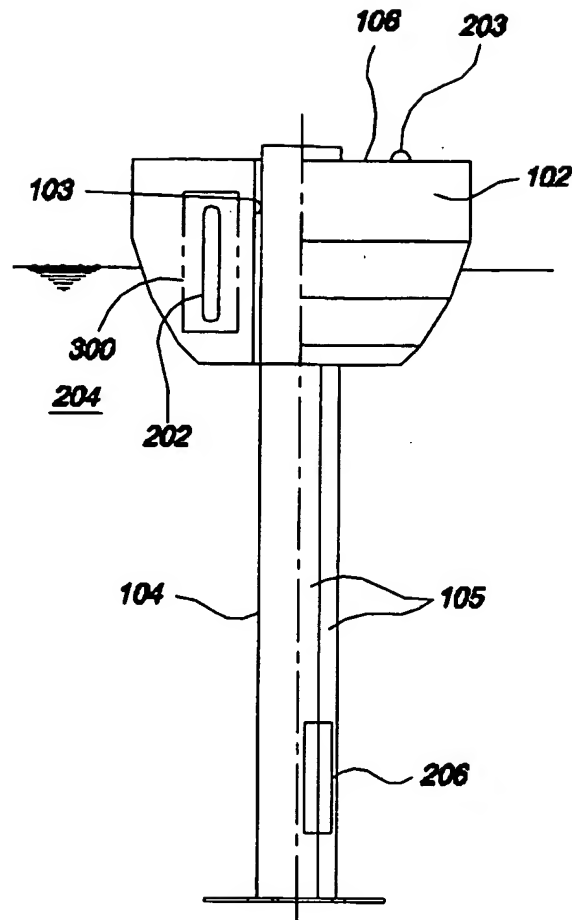
IV. Status of Amendments

In response to the Final Office Action of May 31, 2006, Applicant filed a Notice of Appeal on August 23, 2006.

Applicant filed an amendment of claims on August 17, 2006 subsequent to the issuance of the Final Office Action. This amendment was made to correct a claim objection and place the claims in better for consideration on appeal. The Examiner has entered this amendment. See Advisory Action mailed August 28, 2006.

V. Summary of Claimed Subject Matter

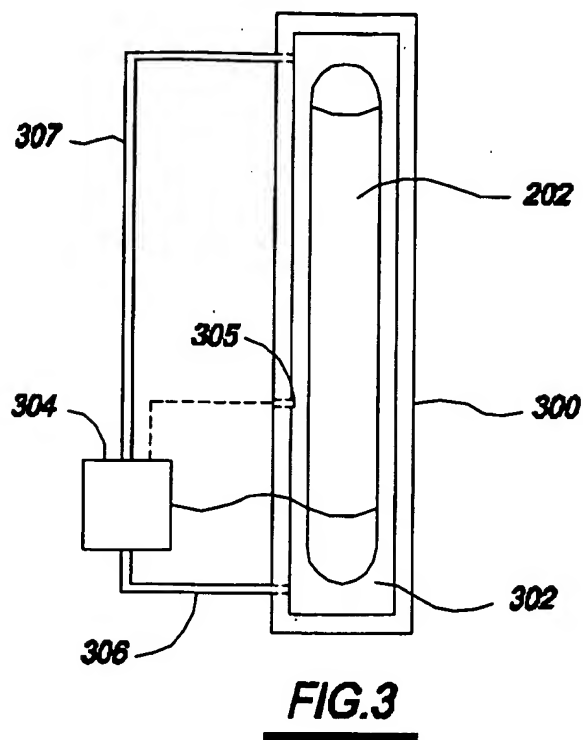
Applicant's invention is directed to an "offshore floating facility for storage of hydrocarbon gas under controlled pressure and temperature and/or for the storage of the hydrate form of hydrocarbons gas." Specification at [0006]. Figure 2 of the application is reproduced below and depicts an exemplary floating vessel 100:



"The vessel 100 has a floating hull structure 102 and a center column assembly 104." Specification at [0013]. "The center column assembly 104 is retained within a hollow central section 103 . . . and is axially moveable with respect to the hull 102 so that the center column assembly 104 is extendable and retractable below the hull 102." Id. ". . . Figure 2 reveals storage vessels 202 within the hull 102 for containing hydrocarbon gases and/or hydrates." Specification at [0014]. "The storage vessels 202 may extend above the deck 106, as well." Id.

"The storage vessels 202 may further be provided with an environmental boundary 300, as shown in Figure 2, to improve the volumetric or separation efficiency of the vessels 202." Id. The environmental boundary is described in greater detail with reference to

Figure 3 of the application, which is reproduced here:



“A heated/cooled fluid 302 surrounds the storage vessel 202. An operably associated controller/heating-cooling/fluid replenishment/pressure control system 304, of a type known in the art, controls the heating/cooling coil 302 to maintain the storage vessel 202 and its contents at or near a predetermined temperature and pressure, based upon readings from sensor 305.” Specification at [0014]. “The controller 304 also provides for replenishment and circulation of fluid 302 within the environmental boundary 300 via entry and return piping” *Id.* “Temperature control is important in the instance of hydrates to ensure that they do not sublime and for gases, to ensure that they remain in their gaseous form.” *Id.*

VI. Grounds of Rejection to be Reviewed on Appeal

Whether the Examiner has properly rejected claims 1-3, 6, 9 and 14-16 as obvious under 35 U.S.C. §103 over the cited references. Applicant submits that:

1. The obviousness rejection of claims 1-3, 6, 9 and 14-16 is Improper.
 - a. There is no teaching or suggestion that it is desirable to combine
 - b. The references clearly teach away from the Examiner's combination
2. The obviousness rejection of claims 10-13 is Improper.

VII. Argument

1. The Obviousness Rejection of Claims 1-3, 6, 9, and 14-16 is Improper

Claims 1-3, 6, and 9 and 14-16 have been finally rejected for obviousness under 35 U.S.C. §103(a). The rejections of these claims hinge upon a combination of one of two references [Parsons (U.S. Patent No. 4,165,706) or Field (U.S. Patent No. 4,627,767)] with the Ulbrecht reference (U.S. Patent No. 3,507,242). The relevant claim element at issue here relates to the circulation of a fluid of desired temperature within an environmental boundary surrounding a storage tank on the platform to control the temperature within the storage tank. The Examiner is using Ulbrecht to supply the teaching of "prior knowledge of flushing the space (i.e., an environmental boundary) between tank walls with inert gases to effect cooling . . ." 2/21/2006 Office action at 4. Ulbrecht's invention relates to "[a] ship separated in a horizontal plane into a lower floating body of ordinary shipbuilding steel and an upper tank part of a material resistant to low temperatures." Ulbrecht, col. 1, lines 14-16.

a. There is No Teaching or Suggestion that it is Desirable to Combine

"To establish a prima facie case of obviousness . . . there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." MPEP §2143. "The teaching or suggestion to make the claimed combination and . . . reasonable expectation of success must both be found in the prior art, not in

applicant's disclosure." *Id.* *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). "The mere fact that a reference can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990)(emphasis added); MPEP §2143.01. Stated another way, the prior art as a whole must "suggest the desirability" of the combination. *In re Beattie*, 974 F.2d 1309, 1311 (Fed. Cir. 1992). *See also*, *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340(Fed. Cir. 2000)("Trade-offs often concern what is feasible, not what is, on balance, desirable. Motivation to combine requires the latter.")

In this case, there are no suggestions or teachings in the art to modify either Field or Parsons to use the environmental boundary cooling shown in Ulbrecht, as the Examiner has done. Neither the Parsons nor Field references contain any discussion of environmental boundary cooling or temperature control for storage tanks, and even the Examiner has never maintained that a suggestion is found in either of those references. As detailed below, Applicant submits that no portion of the Ulbrecht reference suggests the desirability of the use of an environmental boundary. In fact, Ulbrecht teaches directly and strongly against it.

b. The References Clearly Teach Against the Examiner's Combination

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). That is the case here. Ulbrecht teaches against the use of an environmental boundary around tanks on a floating vessel, and one of skill in the art reading Ulbrecht would be discouraged from use of an

environmental boundary as dangerous, prone to leaks, complicated, expensive and otherwise disadvantageous. Ulbrecht explains the boundary concept as follows:

Since . . . liquefied gas has a temperature which is less than - 160° C., it would lead, within a relatively short period of time in case of contact with the ship's walls consisting of traditional shipbuilding steel, to an embrittlement of the hull, and the latter would no longer be able to withstand the water pressure at the embrittled places. For this reason, as is known, in the traditional tankers for liquefied gases, special measures must be taken to prevent the emergence of the liquefied gas into the receiving spaces provided in the hull. In particular, in each case, two container walls which are themselves sufficient to take up the internal pressure of the tank must be provided so that in case of a leak of the inner container the liquefied gas will still be intercepted in the outer container and will be prevented from emerging into the hull.

Ulbrecht, col. 1, lines 27-42. Ulbrecht then explains that the use of this type of environmental boundary is disadvantageous:

. . . extensive, complicated leakage-detection devices must be provided in the space between the two walls in order to be able immediately to detect any possible leaks and repair them promptly. A further considerable expense results from the fact that, before the introduction of the liquefied gas, not only the inner container wall, but also the outer container wall must be cooled. Further difficulties result from the fact that between the ship's walls and the outer walls of the tanks, and possibly also between the two tank walls, there must be provided passages which can be walked through in order to permit examination of, or repairs to, the container walls. If repairs are necessary, particularly on the insulating layers which must be present, then as a rule the ship must be placed out of operation during the time of the repair, which means great loss.

Ulbrecht, col. 1, lines 42-57 (emphasis added). Ulbrecht states that ". . . the traversing of . . . [these spaces between the tank outer walls and the ship's walls] is dangerous"

Ulbrecht, col. 2, lines 57-60 (emphasis added).

Ulbrecht further warns against the use of such environmental boundaries writing:

Disadvantages, furthermore, result from the fact that heating devices, bilge pumps, and the like must be provided for the intermediate spaces between the tank outer walls and the inner walls of the ship, that the pumps for the emptying of the tanks must be arranged at the top thereof, and the like.

Ulbrecht, col. 1, lines 58-64 (emphasis added). Indeed, Ulbrecht's invention is an alternative type of tanker that does not use environmental boundaries so that the disadvantages associated with the environmental boundary are avoided. Ulbrecht notes that:

Another advantage [of the invention] is that the ship's crew can no longer be endangered by the emergence of gas from safety valves or the like, since the tanks are surrounded on all sides by fresh air, and emerging gases pass directly into the atmosphere.

Ulbrecht, col. 2, lines 52-56. The only relevant suggestions found in the art, and specifically in Ulbrecht, are to avoid the use of an environmental boundary, and, therefore, this is a classic case of the art teaching against the combination proposed by the Examiner.

The Examiner has suggested that the environmental boundary cooling described in Ulbrecht is a "non-preferred embodiment" upon which she is entitled to rely. 5/31/2006 office action at 8. Applicant believes that the Examiner's view is misplaced. This is not an instance in which the Ulbrecht reference presents several alternatives (including an environmental boundary) for solving a problem and suggests that another alternative is more desirable than the use of the environmental boundary to solve the problem. In this case, the environmental boundary is, in fact, the problem that Ulbrecht is attempting to solve.

2. The Obviousness Rejection of Claims 10-13 is Improper

Claims 10-13 have been rejected for obviousness over a combination of Field and Ulbrecht. See 2/21/2006 office action at 5-6. The Examiner considers Field to show "a plurality of storage vessels." Id. at 6. Applicant has argued below that the proposed combination does not reveal at least the element of a storage vessel for storage of a

material of the group consisting of hydrocarbon gas and solid hydrocarbon hydrates. See 3/16/2006 Amendment at 8. The Examiner has argued that “the prior art storage vessels [of Ulbrecht] are ‘useful for storage of hydrocarbon gas or hydrates’ as recited in claim 10.” 5/31/2006 office action at 8. She has also argued that the recitation of storing hydrocarbon gases or hydrates is merely a recitation of intended use of the claimed invention and, that if the prior art structure is capable of performing the intended use, it meets the claim. *Id.* Applicant continues to maintain that there is no evidence or indication in the art that the storage vessels of Ulbrecht would be suitable for or capable of storing either hydrocarbon gases or solid hydrocarbon hydrates. 3/16/2006 Amendment at 8. In fact, the storage vessels shown in Ulbrecht are used to store liquids. *Id.* There is no evidence to show that these storage vessels have the pressure and temperature controls necessary to store either substance. All claim limitations must be taught or suggested. MPEP §2143.03. Because at least this element is not taught or suggested by the art of record, claims 10-13 should be deemed allowable.

VIII. Claims Appendix

An appendix containing a copy of the claims involved in this appeal is attached hereto.

IX. Evidence Appendix


There has been no evidence pursuant to §§1.130, 1.131, or 1.132 or other evidence submitted in this application.

X. Related Proceedings Appendix

None.

Respectfully submitted,

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CLAIMS APPENDIX

1. (Previously presented) A floating structure comprising:
a floatable hull that presents an upper deck;
a column assembly that is retractable and extendable below the hull; and
a storage vessel for storage of a material of the group consisting of hydrocarbon gas and solid hydrocarbon hydrates; and
wherein the storage vessel is surrounded by an environmental boundary for control of temperature within the storage vessel, and wherein a fluid of desired temperature is circulated within the boundary to control the temperature within the storage tank.
2. (Previously presented) The floating structure of claim 1 wherein the storage vessel is disposed within the floatable hull.
3. (Previously presented) The floating structure of claim 1 wherein the storage vessel is located atop the floatable hull.
4. (Cancelled)

5. (Cancelled)
6. (Previously presented) The floating structure of claim 1 wherein the storage vessel is disposed within the column assembly of the floating structure.
7. (Cancelled)
8. (Cancelled)
9. (Previously presented) The floating structure of claim 4 wherein pressure within the storage vessel is also controlled.
10. (Previously presented) A floating structure comprising:
 - a floatable hull that presents an upper deck and defines a hollow central section therewithin;
 - a column assembly mounted within the hollow central section and being retractable and extendable below the hull; and
 - a plurality of storage vessels disposed within the floatable hull, each of the storage vessels being useful for storage of hydrocarbon gas or hydrates.
11. (Previously presented) The floating structure of claim 10 wherein at least one of the storage vessels is located upon the upper deck.
12. (Previously presented) The floating structure of claim 10 wherein at least one

of the storage vessels is located within the floating hull.

13. (Previously presented) The floating structure of claim 10 wherein at least one of the storage vessels is located within the column assembly.

14. (Previously presented) A method of storing compressed hydrocarbon gases or solid hydrates following production and prior to transport to a remote location, comprising the steps of:

disposing said gases or hydrates within a storage vessel upon a floating platform, the floating platform having a hull and a column assembly that is extendable and retractable below the hull for stability of the floating platform;

controlling the temperature of the storage vessel by circulating a fluid of desired temperature about the storage vessel.

15. (Previously presented) The method of claim 14 further comprising the step of offloading the gases or hydrates to a transport tanker.

16. (Previously presented) The method of claim 14 further comprising the step of mooring the floating platform in place proximate an offshore production well prior to disposing the gases or hydrates within the storage vessel.

17. (Cancelled)